

REMARKS

In response to the Office Action dated March 6, 2003, claims 1, 5, and 9 are currently amended, and claims 11-13 have been added. Claims 1-13 remain in the application. It is not the Applicants' intent to surrender any equivalents because of the amendments or arguments made herein. Reexamination and reconsideration of the application are respectfully requested.

Allowable Subject Matter

On page 7 of the Office Action, claim 2 was objected to as being dependent on a rejected base claim, but would otherwise be allowable if written in independent form including all of the limitations of the intervening claims.

The Applicant thanks the Examiner and formally recognizes the allowable subject matter of claim 2 as originally submitted. Applicants have added claims 11-13 based on the allowable nature of original claim 2.

Objections to the Drawings

On page 2 of the Office Action, Figure 3 was objected to because the illustration was hazy.

The Applicants thank the Examiner and submit herewith a proposed replacement sheet for FIG. 3 on page 11 of this response.

Art-Based Rejections

On pages 2-7 of the Office Action, claims 1-10 were rejected as follows.

Claims 1, 3, and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe (USPN 6,222,286) in view of Takagi (US Application 2002/0005670 A1) and in view of In re Leshin.

Claims 5-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe (USPN 6,222,286) in view of Takagi (US Application 2002/0005670 A1), Yamamoto (USPN 5,121,017) and in view of In re Leshin.

Applicant respectfully traverses the rejections, but, in order to expedite prosecution of the application, has amended the claims. Applicant believes that any amendments made under this section merely clarify the claim language, and do not surrender any equivalents because of such amendments. It is not Applicant's intent to surrender any equivalents due to amendments made which may touch upon these rejections. The Applicants respectfully submit that the claims are patentable in light of the clarifying amendments above and the arguments below.

The Watanabe Reference

The Watanabe reference ("Watanabe") discloses a stepping motor having stator yokes with a plurality of comb-tooth-shaped magnetic poles in such a manner that the comb-tooth shaped magnetic poles are opposed to each other coaxially to a rotor portion made from a permanent magnet magnetized to have multiple magnetic poles, and an excitation coil is fitted on the external circumference of the stator yokes. See Abstract.

The Takagi Reference

The Takagi reference teaches a claw-pole permanent magnet stepping motor including a pair of cases containing two or more inductors in symmetrical arrangement with multiple claw poles. See Abstract.

The Yamamoto Reference

The Yamamoto reference teaches a stepping motor with a stator comprising a coil member having a central shaft portion having an axis and a pair of flange portions extending from both ends of the central shaft portion. The coil member has wirings

wound around the central shaft portion between the pair of flange portions, and the central shaft portion has an inner peripheral wall defining a cylindrical hollow portion. The stator further comprises a pair of yoke members each including a annular base plate portion and a plurality of teeth-shaped magnetic pole portions extending upright from the baseplate portion. See Col. 2, line 58-Col. 3, line 1.

The Claims are Patentable over the Cited Reference

The claims of the present invention describe a motor comprising a rotor equipped with a magnet, a stator yoke, a bobbin, and a cylindrical motor case. The stator yoke has claw poles generally in a comb shape disposed opposing to one another and arranged in a cylindrical shape extending in an axial direction and around an outer periphery of the rotor in a circumferential direction. The bobbin formed from a coil wound around the stator yoke. The cylindrical motor case houses the rotor, the stator yoke and the bobbin, and is formed from conductive material, wherein the motor case has side wall sections defining plane opening sections in areas opposing to portions of the bobbin, and an outer peripheral surface of the coil of the bobbin is located in close proximity to the opening sections, wherein at least one of the plane opening sections are parallel with an axial direction of terminal bases that are provided along the direction in which terminals are taken out of the motor case.

The cited references do not teach nor suggest the limitations of the claims of the present invention. Specifically, the cited references does not teach nor suggest the limitation of the plane opening sections being parallel with an axial direction of terminal bases that are provided along the direction in which terminals are taken out of the motor case.

Although the Watanabe reference teaches a motor case that has plane open sections, see, e.g., FIG. 2, frame yoke 10 having a cutout in the wall of frame yoke 10, which cutout is used to remove the terminals from the motor case, this cutout or opening is perpendicular to an axial direction of these terminal bases, not parallel to the axial direction of the terminal bases as claimed in the present invention.

The ancillary Takagi and Yamamoto references, alone or together, do not remedy the deficiencies of the Watanabe reference, namely, the Takagi and Yamamoto references do not teach nor suggest the limitation of the plane opening sections being parallel with an axial direction of terminal bases that are provided along the direction in which terminals are taken out of the motor case.

It is desirable to have plane opening sections that are parallel with an axial direction of terminal bases that are provided along the direction in which terminals are taken out of the motor case. Such a configuration allows for reduction of the size of the motor case. The configuration of Watanabe does not allow for such a reduction, because the opening is perpendicular to the axial direction of the terminals, and thus the length of the terminals will always add to the width of the motor case in that direction. This advantage provides additional applications and uses for motors, since the size of the motor case can be reduced without sacrificing motor efficiency.

Thus, it is submitted that independent claims 1, 5, and 9 are patentable over the cited references. Claims 2-4, 6-8, and 10 are also patentable over the cited reference, not only because they contain all of the limitations of the independent claim1, but because claims 3-6 also describe additional novel elements and features that are not described in the prior art. New claims 11-13 are patentable because they contain the limitation of original claim 2, which was considered allowable by the Examiner in the Office Action.

Conclusion

It is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe that there are matters relating to this continuation application remaining that can be resolved in a telephone interview, the Examiner is urged to call the Applicants' undersigned attorney.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at telephone number (213) 337-6742 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,

HOGAN & HARTSON L.L.P.

Date: April 16, 2003

By: 

Anthony J. Orler
Registration No. 41,232
Attorney for Applicant(s)

Biltmore Tower
500 South Grand Avenue, Suite 1900
Los Angeles, CA 90071
Telephone: (213) 337-6700
Facsimile: (213) 337-6701